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AUTHOR Tharp, Robert N.
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ABSTRACT

Description begins with remarks concerning the Institute of Far Eastern Languages, established in 1946, and the early efforts made in intensive language study in the Chinese Language School. The article describes the unique audiovisual materials and techniques used in the schools. Included in the description are: (1) dictation equipment, (2) magnetic discs, (3) flash cards, and (4) magnetic projection. The necessity of audiovisual equipment, its advantages, and limitations at the institute are reported. (RL)

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DEVELOPMENT OF AUDIO-VISUAL TECHNIQUES USED AT THE INSTITUTE OF FAR EASTERN LANGUAGES YALE UNIVERSITY

By ROBERT N. THARP
Chairman, Audio-Visual Program
Institute of Far Eastern Languages, Yale University

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Early Intensive Lingual Study—1942

Yale University entered the field of intensive language instruction early in World War II primarily to meet the requirements of the Armed Services in preparing military personnel for service in the Far East. At that time, courses were prepared in a variety of languages but due to the urgent need for linguists in the shortest possible time, the courses offered were mostly of the so-called "quickie" variety with emphasis placed on giving the student an absolute minimum working knowledge of the language in the shortest possible space of time. The best that could be hoped for at the time was that a student completing this course could supervise native personnel in either interpretation or translation rather than being competent to do the actual work himself. The fact that many hundreds of men progressed further than this basic minimum is a tribute to their own personal devotion to duty and to the ability of their instructors and the methods used.

The Institute

Due to increasing demand for language courses, the Institute of Far Eastern Languages was established in 1946. From its very inception, the Institute recognized the need and value of audio-visual equipment to be used as an adjunct to language study. One very obvious reason, of course, being that such equipment saved valuable teacher time in eliminating multiple repetition; however, in addition to this, audio aids were needed to assist the student in perfecting pronunciation, developing rhythm and above all, practicing over and over again what he learned as well as carrying out various "homework drills." It is pertinent here to mention that the Institute of Far Eastern Languages, while a pioneer in this audio-visual field, has never subscribed to the popular concept of learning a foreign language entirely by mechanical means. It is true that there are undoubtedly a number of good "canned" types of language courses available and it is also true at the same time there are individuals who are unable to devote the time to attend a school of languages such as the Institute, and who must perforce avail themselves of such recorded language courses as exist. However, despite the great

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advances made in the field of audio equipment and the present day high standards of fidelity in both tape and disc recordings, it is the opinion of those handling the courses at the Institute of Far Eastern Languages that trained instructors, native speakers of the language being learned, are and always will be a very vital and necessary part of language study and this talented and devoted body of individuals will never be entirely replaced by mere machines, just as mechanical translating devices, which though unquestionably in the not too distant future will be able to take over routine translating, will never in the opinion of this writer, be able to entirely replace the human counterpart. At the same time, however, seventeen years of experience in using audio-visual equipment at the Institute of Far Eastern Languages has conclusively proven the value and necessity of such aids to language study and this article will attempt to discuss not only the equipment itself, its advantages and limitations, but also the techniques applied in using such equipment, together with a brief outline of the language courses themselves.

Dictation Equipment

It must be remembered that when the Chinese Language School came into being, very little was available on the market in the way of recording devices apart from the complicated equipment used by professionals in the field of radio and other entertainment. Devices for reproducing the human voice outside of this area were limited to the various ingenious but often bulky equipment used in business offices by busy executives in dictating letters. These, for the most part employed the well remembered wax cylinders or plastic coated discs, etc. The equipment itself was well-built and designed to last indefinitely and the voice reproduction was remarkably good, even by present day standards; nevertheless recordings made on these devices were only intended in the first place to be listened to, perhaps by the individual making the recording in a play back for purposes of editing or correcting and secondarily, to be listened to by the secretary when making a typed manuscript. In other words, these recordings were designed only to be listened to a maximum of two or three times, whereas when applied in the teaching of a language, the recording of necessity had to be listened to as many times as desirable. This often amounted to perhaps 50 or 100 playings by any given student after which the recording very often was understandably scratchy and semi-unintelligible and a replacement would have to be made for subsequent students. This proved both a costly and tedious business, but nevertheless was considered very worthwhile and the equipment used performed faithfully and well until replaced by the more modern wire recorder and later the tape recorder and since then by other subsequent developments which will be discussed later, all of which gave recordings with unlimited play-back, life.

In 1942, Yale secured several dictation type machines and these were utilized by the instructors, largely, in personal application with students, the teacher dictating onto the machine certain words and phrases in the language being studied and having the student repeat these same phrases after him. These recordings could be played back later and the student could then listen to his efforts and compare them with the instructor's pronunciation. This method, while giving excellent results, was obviously costly in teacher time and, therefore, an improvement on this was made by having instructors make up master records to which the student could listen on his own and, at the same time, make his own recordings on a second machine. Ultimately, as the number of students increased, more machines were secured and master recordings were made in greater numbers. An ingenious device was developed at this time when a bank of at first ten, and later twenty recording machines were combined together through a complicated series of switches and transformers and all ten could be activated at one time by one switch and all twenty machines could simultaneously record from one master recording. In this way, a large number of copies could be reproduced at one time at a still greater saving in teacher time, and this method was, of course, necessary due to the extreme wear and tear given to each recording by language students and the frequent replacement necessary. Due to

war-time shortages of metal and other components and to the demands made by the Armed Services for dictation equipment, it proved very difficult to secure the additional machines that were later needed as the number of students increased, but again ingenuity came to the forefront and junction boxes were developed which could be plugged into any given machine, thus enabling four students using headphones to plug into these junction boxes and simultaneously listen to the one recording. Headphones had been adopted from the very beginning, of course, having proved more satisfactory than having students listen to the recording through a loudspeaker, where concentration was made difficult by outside noises. These methods were employed by the Institute with minor variations until the wire and tape recorders came along, at which time the master recordings could be produced with much greater fidelity; this in turn improving the fidelity of the disc recordings reproduced on the dictation machines for the use of students. At the same time, of course, wire and tape recorders, when they appeared, were used more and more in the classroom, both with large groups and individual students. With the advent of the tape recorder, the end results (reproductions on discs) were much improved; nevertheless, the interest in languages grew and the number of students increased, the process of reproducing these disc copies for student use became increasingly laborious and expensive. The Institute had at one time over 100 of these disc type machines in use and a full-time technician was employed doing nothing but making new recordings to replace those being worn out through the assiduousness of the students, at one time hitting a peak of 1,000 new discs each week. Experiments were made with various types and models of tape recorders, with a view to installing these for student use, but the relatively complicated mechanism and the frequency of tape breaking, together with accidental erasures of the recorded material on the part of the student, made the usage of tape recorders for student use an extremely hazardous undertaking as well as an extremely costly one, particularly where a large number of students were involved, as was the case of the Institute of Far Eastern Languages.

A Different Type of Laboratory

As experience was gained in the language teaching field, it became more and more apparent that a maximum amount of control should be exercised over the student in listening to certain exercises, otherwise he tended to rely too much on multi-repetition of the material at hand which tended to slow down his progress. Comprehension exercises were developed in the early 1950's and these were recorded on tape and played back to groups of students, with the instructor controlling the time element allotted to the student to translate that which he heard on the tape, frequency of repeats, pauses, etc., and loud speakers were used as the classes grew in size; but problems

appeared here in acoustical properties of the rooms used, difficulty of hearing for students in back rows, etc., and the confusion created by rustling of papers, coughing and sneezing of students, etc., and another method had to be developed. Early in 1953, experiments were made in developing a simpler system where students could listen to recorded material over headphones, and another laboratory was built where the sound was piped to each individual seat and the student was enabled to listen to the recorded material with a pair of headphones. This method proved an instantaneous success and has progressively been developed to the point where the Institute now has three such language laboratories where controlled comprehension exercises are administered. Material given to the students in these comprehension exercises is pre-recorded on tape, then played to the students on a tape recorder through a 30-watt amplifier then, in turn, is put through a series of transformers which reduce it to low voltage, and students listen through 11-ohm low impedence (low impedence headsets were selected for reasons of economy and simplicity of maintenance) headphones. Fidelity is excellent and with a pause button on the tape recorder, the instructor is enabled to control the exact amount students are required to listen to at any given point, thus reducing the memory load each student must carry in listening to a story and emphasizing his actual comprehension ability. For example, students listen to a ten or twelve minute story. They hear the complete story through for purposes of continuity and each student is supplied with sheet containing fifty questions, each of which must be answered with actual material from the story. The student is required to translate what he learns in Chinese and write out the answer in English, but in order to alleviate the burden of the student who has a relatively poor memory, the questions are broken down on a second play-through, and just that amount of material covering two or three questions is played at one time. The student then completes his answer and the tape goes on. This form of controlled comprehension exercise is administered one hour per day throughout the entire eight-month course and has proven extremely successful. In addition to this form of comprehension exercise administered by tape recording over what might be called the public address system, we have a variety of other types of exercises which are administered in the same way. (Some use repeater tapes where the same material is repeated endlessly for the duration of the class period.)

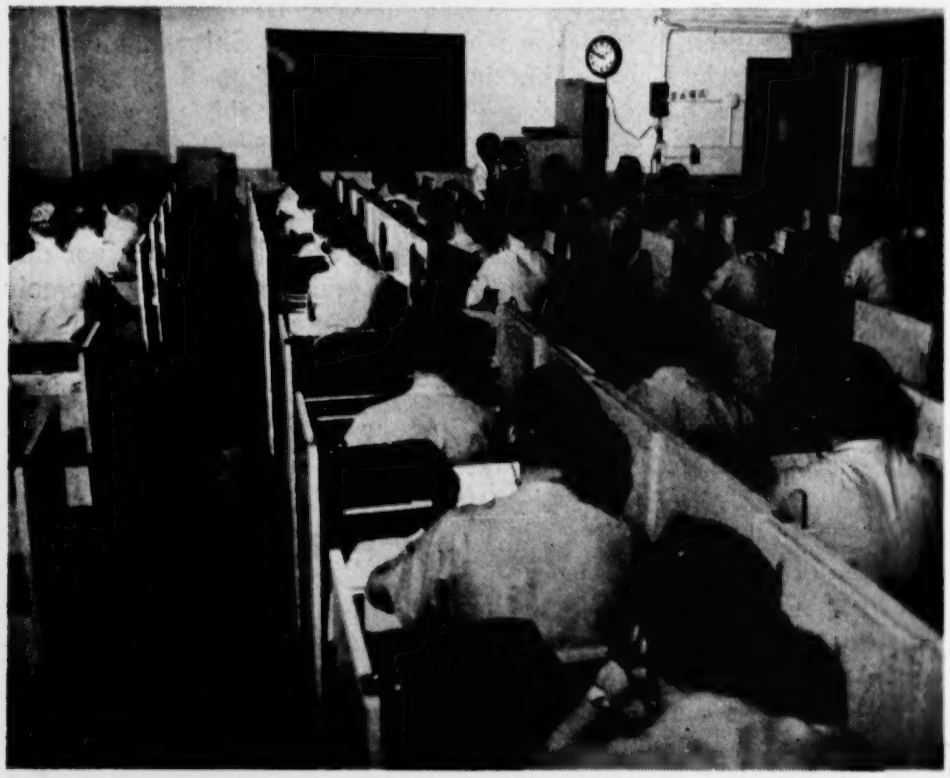
Magnetic Discs

Experiments were continually made with new recording devices as they appeared on the market in an effort to cut down the laboriousness of constantly reproducing new recordings for student use. In 1954, a flexible plastic *magnetic* disc was brought to our attention which had the simplicity of the phonograph record but which could

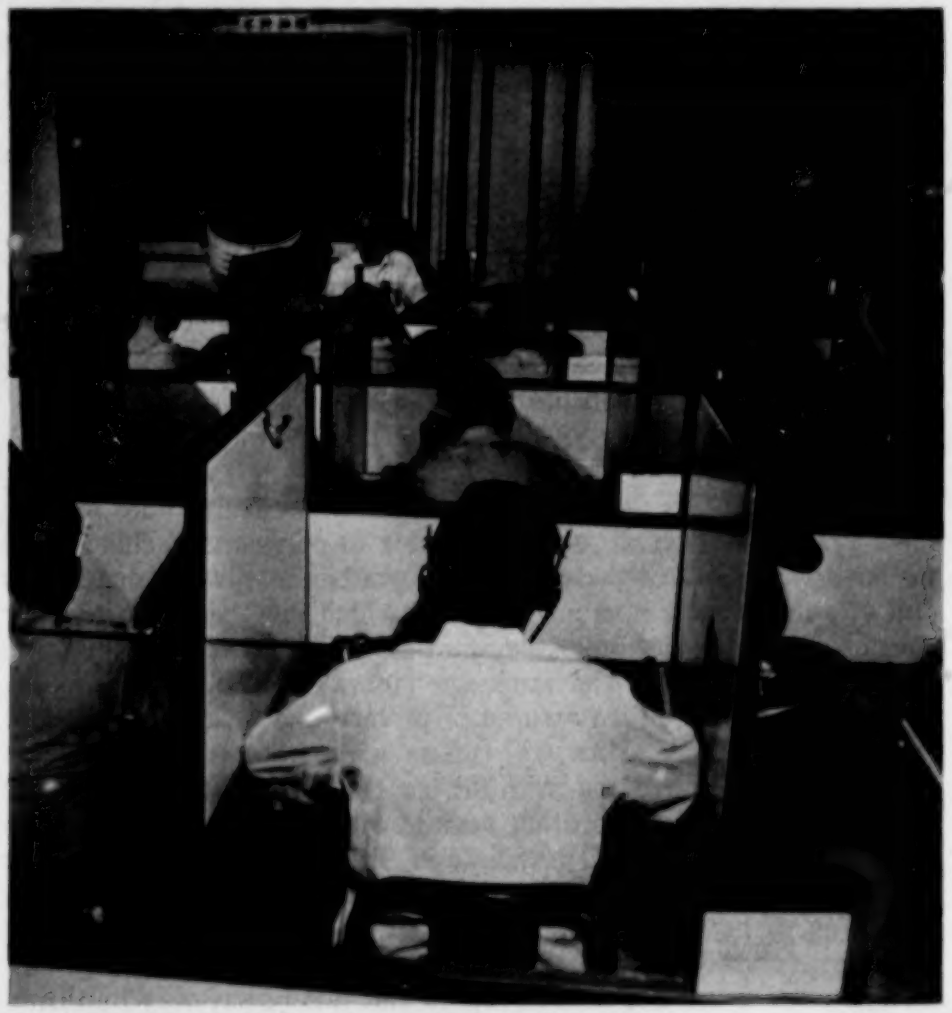
play a recorded program back as many as 5,000 times, yet could be erased easily and used over again. The fidelity of the recordings made on these discs was inferior to tape recording, but not inferior to our previous methods. This equipment was put into use late in 1956 with some variations and improvements suggested by us. The institute at the present time has over 300 of these machines in daily use, with a library of upwards of 75,000 recorded discs for student use in three different languages, Chinese, Japanese, and Korean. Master recordings are also available in several other languages, such as Indonesian, Burmese, and Cantonese.

Use of the Laboratory

The term language laboratory or sound laboratory is now in everyday use and, as mentioned above, the Institute of Far Eastern Languages has three such language laboratories, one equipped only with the public address system spoken of above and used only for controlled comprehension exercises, etc. The other two labs (one of which seats 90 students and the second, for more specialized work, seating 20) have individual booths for each student and, in addition to the public address system, each booth is equipped with a magnetic disc recorder/playback. These versatile machines lend themselves to a variety of uses. Taking our Chinese course for example, the basic course is of eight months' duration, students attending class six hours each day, five days a week. A minimum of two hours each day is spent in the language laboratory listening either to recorded discs



or to controlled tape recordings. Work done by the students with the use of recorded discs varies from study periods in which they listen to a complete recording of the next lesson to be taken up, or to high speed exercises where they listen to short sentences and paragraphs made up on the current lesson. These, of course, are recorded in the language under study and the student is required to translate these as he hears them. The playback machines are equipped with a reverse feature so that the student is enabled to listen to any given section repeatedly until he is absolutely sure that he knows



what it means. Students are also issued recordings of supplementary materials as aids in studying the current lesson. In addition, the student may at any time draw a blank disc and a microphone and, utilizing his own particularly assigned machine, make his own recordings. In this way, he can practice his pronunciation and, by comparing the master recordings issued to him, he may evaluate his own progress from time to time. The instructor may also, at any given time, assign a student a given exercise and then take the recordings which the student has made and evaluate and grade his

work. The language lab also lends itself to exercises where the instructor will speak over the public address system in the foreign language while the students, in turn, either translate what he is saying, record what is said onto discs for individual study, or repeat what he is saying in the language itself, meanwhile making a recording of their own voices for evaluation and study. The Institute has, in addition to these above-mentioned language laboratories, an additional language laboratory equipped with both disc players and tape recorders. This is primarily for the use of advanced students who will make simultaneous translations from advanced materials, such as radio broadcasts, lectures, readings from current literature or foreign language newspapers, etc. Exercises vary from passive listening on the part of the student to active translation where he may either write down a translation or may record his instantaneous translation on tape. The tape recorders are, in addition, binaural; in other words have two tracks operating in the same direction. The students may at any given time be issued master tape recordings where they can develop their pronunciation by listening to the master tape and then attempt to mimic the speaker and record their own voices on the lower channel. Subsequently, when playing it back, they are able to compare their efforts with the master tape.

RENTAL OF STUDENTS UNITS

Supplementary to the language laboratories, the Institute has for some years had a rental service available in playback machines, and we have some 200 of these machines available which students may rent at an extremely nominal sum and which they can take to their quarters or homes for home-study purposes. This is preferred by some students to coming to the language laboratory itself in their off-hours, since they are then assured of privacy and lack of distraction. Not uncommonly, students will set up a tape recorder or disc recorder beside their bed and, with the use of a small extension speaker or headphones and a repeating device, will lull themselves to sleep with the language playing in their ears, in an attempt to absorb the language this way. On one occasion, one of our students even went so far as to have his devoted wife sit up half the night playing language recordings so that he could absorb it during his sleep. Unfortunately, we are not able to report that this in any way improved his grades.

Teaching Techniques

We have only discussed up to this point the physical aspects of the language laboratories at the Institute of Far Eastern Languages. It seems pertinent here to briefly discuss the teaching techniques employed in the courses offered and the Chinese language course will again be taken as an example. As mentioned above, the basic course covers a period of eight months or roughly 32 weeks. Three

text books are covered during this period and the course is thus roughly divided into three phases, each essentially following the same basic pattern. The school day is of six hours duration and a new lesson is introduced every other day, thus each lesson consists approximately of a twelve-hour cycle. However, not all twelve hours are devoted to the current lesson. At least two comprise review of the preceding lesson, thus dovetailing one lesson with the next. A twelve-hour cycle consists essentially of the following: the first hour is a study period where the students listen to a recording of the new lesson and they are required during this period to familiarize themselves with the new vocabularly therein. The lesson material is presented first with a dialogue or short story employing the new terminology. Students are encouraged to listen to this first before reading the new vocabulary. In this way, as they listen to the dialogue, the new words stand out prominently and students are encouraged to attempt to fit these into the story, making a mental translation and then referring to the translation given in the book. In many cases, they find that the meaning of a new word will suggest itself to them even before they are exposed to the vocabulary itself.

Flash Cards

Each student is issued small cards approximately an inch and a half square and he is encouraged to write on one side of the card the new vocabulary term in the language being studied and on the reverse the meaning of the word or words. These we call "flash" cards and students carry these with them at all times and are encouraged to constantly refer to these, flashing them back and forth through their hands until they have no further trouble in recognizing the meanings of any given words either when reading the word in the foreign language or when doing the reverse, trying to translate from English back into the foreign language. This study hour usually precedes the introduction of the new lesson by one or two hours.

Grammar

The second hour of the lesson cycle is a formal introduction to the lesson where the students are all assembled together in what is termed a general class and here the instructor familiarizes them with the grammatical structure in the lesson and clarifies the vocabulary usage. In this class, students are encouraged to raise any questions of a grammatical nature that may be on their minds.

Native Speakers

Following this hour, students are divided into small groups, usually not exceeding eight in number, and are, in this class, thoroughly drilled by native speakers, each student being given an opportunity

to pronounce the newly introduced words and to translate short phrases and sentences employing the new terminology. This class is normally the last of the day and students are encouraged to study the new lessons overnight as well as doing homework on preceding lessons.

Comprehension Exercises

By the following morning, they are expected to be thoroughly familiar with the actual vocabularly of the new lesson and they are then exposed to one of the controlled comprehension exercises mentioned above. In the early stages of the course, comprehension exercises are limited to one per lesson. In the second phase of course, comprehension exercises appear twice in each cycle, the first being relatively simple, the second a greater challenge to the students. An effort is made in these comprehension exercises to provide as much review material as possible. A drill class with a native speaker follows the comprehension exercise; after this comes a general class which may be either a grammatical structure review or a class where an instructor drills the student in oral or "live" high speed comprehension.

High Speed Drill and Testing

Short sentences and phrases are introduced at a speed somewhat higher than normal-speaking speed as, for example, when a speaker may be highly excited. It has been found that students can assimilate high speed material much more readily when it is given orally than can be done from recorded material. Thus these "live" periods are used to prepare them for the tape recorded materials or disc recorded materials which follow. By this time, the student is considered thoroughly familiar with the vocabulary of the current lesson. He is again exposed to another small drill-class session where he may be required to make short translations back and forth from English to the foreign language and vice versa, or perhaps he may be required to come prepared with a story which he will tell in the language. This is followed with a discussion by the students and teacher. A free conversation period may follow this. Last in the cycle is a general class to which students come prepared with preassigned translations already completed. These are then read to the instructor and discussed before the entire class, with corrections given if necessary. An essential part of each lesson-cycle is a laboratory period devoted to recorded material which we call Rapid Fire. This consists of 20 or 30 sentences and, later on, paragraphs of material recorded at very high speed which students are required to translate into English. Answers are read at the end of the period or posted on bulletin boards and students are encouraged to check their translations against the master and, if necessary, take the recordings home to complete the work or do assigned homework if their work is not

up to standard. In connection with the controlled comprehension periods where the student listens to tape recorded material, the completed question sheets are corrected and graded by an instructor and the student's progress is closely studied. Should he fail to come up with satisfactory work, he is given a disc recording of the same material, together with another copy of the questions sheet and, as a homework assignment, he is required to do the entire comprehension exercise over once again. With each six lessons, the students are given an exhaustive review of the material covered and then given a major test. The results of this test are correlated with their former grades and an accumulative grade is then posted.

Magnetic Projection

The reader, by this time, will have formed an impression that the emphasis is primarily on audio rather than visual work. This is in fact the case. However, the visual aspect is not neglected, although it takes a second place. Once each week, students are shown films with a foreign language sound track geared to their current vocabularly. Actually films of this type are difficult to obtain, particularly in the elementary vocabulary, so the Institute is equipped with a magnetic sound projector where a magnetic stripe is placed on the edge of the film and a language sound track is recorded which may be played either in conjunction with the original optical sound track or may be played separately. It is possible for example to play one sound track through headphones and the second sound track through a loud speaker. Students may thus, by using headphones, listen with one ear to English and the other ear to the foreign language sound track. However, the use of the English sound track is discarded as soon as is practicable. In addition to films, of course, considerable use is made of blackboard illustration, particularly in small drill sessions and in general class sessions.

In addition to the eight-month basic course, the Institute has courses running from twelve months to twenty-four months in which students are exposed to the extremely difficult Chinese written language. A number of short-cut methods have been developed but a detailed description of these has no place in this article. However, one development should be mentioned and this is an adaptation of the equipment to project written or printed material on a screen to develop in the student high speed reading and comprehension of written Chinese. A course has been developed where a large amount of written Chinese material has been filmed and, through an extremely versatile and ingenious mechanical device, can be exposed on a screen at varying rates of speed. This development is so new that it is too early to evaluate any actual achievement.

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